



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/749,803

12/29/2003

Ajay G. Gupta

884.A47US1

5339

21186 7590 08/21/2007  
SCHWEGMAN, LUNDBERG & WOESSNER, P.A.  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402

EXAMINER

THIER, MICHAEL

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

08/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/749,803	Applicant(s) GUPTA ET AL.	
	Examiner Michael T. Thier	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/19/2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (US 2002/0072391) in view of Chlytchkov (US 7065638), in further view of Krantz et al. (US 2004/0153676) in view of Gavlik (US 7073077).

**Regarding claims 1, 9, 15 and 23.** Itoh teaches a system (figure 1) comprising a wireless base-station (figure 1 item 9-1) and a user device (figure 1 item 10). The user device connected to the wireless base station (see figure 1, the dotted line between 20-1 and 9-1), and the device comprising:

a plurality of network adapters in a user device to connect to a system (see figure 1 items 20-1, 20-2, 20-3, and 20-4);

a plurality of network device drivers to control function of the network adaptors (see figure 1 items 20-1, 20-2, 20-3, and 20-4, further see par. 41 i.e. driver software 6 for using the communication adapter 20)

a sensing driver adapted to sense an operational state of at least two of the plurality of network adapters (see par. 13, i.e. "...determining whether all the communication adapters configured in the system are available or not...");

a policy manager adapted to receive state information from the sensing driver and to selectively activate at least one of the plurality of network adapters, through communication with the plurality of network device drivers, based on the state information and a hierarchy of preferred network adapters (see par. 13, i.e. "...enabling the communication adapter specified by the user if it is determined that the communication adapter specified by the user is available", also see par. 15 for the hierarchy, or "priorities", for setting the adapters to be enabled/disabled), the policy manager being adapted to selectively hold others of the plurality of network adapters, through communication with the plurality of network device drivers, based on the state information and a hierarchy of preferred network adapters in a reduced power state (par. 13, i.e. "...disabling, among communication adapters determined to be available, communication adapters other than the enabled communication adapter...", also see par. 15 for the hierarchy, or "priorities", for setting the adapters to be enabled/disabled).

Itoh further teaches of a power saving in a notebook PC (par. 8) and the idea that the software contains multiple layers (figure 1 items 7 and 8).

However, Itoh does not distinctly disclose that the sense driver and policy manger are at different levels and that the sense driver is at the kernel level.

Chlytchkov teaches a computer system and method in which the software may contain several layers in column 1 lines 31-46. He teaches the idea that device drivers reside in the kernel layer in column 4 lines 27-45 (i.e. the claimed sense driver is located in the kernel layer). He further teaches in column 4 lines 27-45 that the software may contain an application layer, which communicates with the device driver (in the kernel layer) to communicate with the corresponding device. (i.e. the application layer may contain the policy manger to control the wireless network adaptor since it communicates with the driver in the kernel layer, to effectively then communicate with the actual device (i.e. wherein the actual device may be the wireless network adapter.) Chlytchkov further explains that the different levels of software can be firmware, device drivers, and applications (column 1 lines 30-45). The network device drivers are located in the device driver layer (since they are device drivers), while the sensing driver could be located in the application layer (see figure 1, since it is an application to sense the state of the network adapters), which is a lower level than the device drivers.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Chlytchkov into the teachings of Itoh. The motivation for doing so would have been to make it easier to allow for adding new features and new software (Chlytchkov column lines 26-30, and 46-53).

However, they do not distinctly disclose that the device comprises a battery. The examiner would like to note that a battery in the device of Itoh (which is explained in par. 4 to be a notebook PC, and explained in par. 25 to be portable) is inherent, however for further clarification Krantz is provided to show the obviousness of the battery limitation.

Krantz discloses a method and apparatus for managing power in a network interface modules (title and abstract). He teaches the idea of the portable computing device, i.e. laptop computer from par. 2, or as explained above a notebook PC, comprises a battery (see par. 2 and 4, where he explains the need to minimizing power consumption to extend battery life.)

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Krantz into the teachings of Itoh and Chlytchkov. The motivation for doing so would have been to allow for greater mobility, and minimizing power consumption of the battery. (Krantz par. 2 and 4)

However, they do not specifically disclose that the driver "continuously" senses the operational state of the wireless network adaptors. Although this is not stated in any of the previously applied references, the examiner would like to note that the idea of continuously monitoring the operational state of the network adaptors is a very well known and widely used technique in the wireless communications art (commonly known as "Wake on LAN" in the network adaptor area), and is especially used for power conservation. However, for further clarification the examiner provides the following reference to Gavlik.

Gavlik teaches an apparatus and method for cutting power to specific circuitry in a network interface device (abstract and title). He teaches that the idea of "Wake on LAN" schemes is wide known in column 1 lines 63-67, and that this type of scheme detects data traffic on the NIC, and powers down the chip if nothing is detected. This is a continuous type of monitoring and is widely used in power conservation.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Gavlik into the teachings of Itoh, Chlytchkov, and Krantz. The motivation for doing so would have been to allow for power conservation of the device

**Regarding claim 2.** Itoh further teaches, wherein the policy manager is adapted to selectively hold at least one of a non-selected group of the plurality of wireless network adapters in a reduced power state, and wherein the non-selected group does not include an activated one of the plurality of wireless network adapters. (see par. 21)

**Regarding claim 3.** Itoh further teaches, wherein the policy manager is adapted to store a hierarchy of preferred wireless network adapters. (see par. 15)

**Regarding claim 4.** Itoh further teaches, wherein the policy manager is further adapted to selectively activate at least one of the plurality of wireless network adapters based on the hierarchy of preferred wireless network adapters. (see par. 15)

**Regarding claim 5.** Itoh further teaches, wherein the policy manager is adapted to be programmed by a user to establish the hierarchy of preferred wireless network adapters. (see par. 13, i.e. "...specified by a user..." and par. 15)

**Regarding claim 6.** Krantz further teaches wherein the plurality of wireless network adapters include at least one wireless network interface card adapted to operate according to an IEEE 802.11x standard in par. 3.

**Regarding claim 7.** Krantz further teaches wherein the plurality of wireless network adapters include at least one wireless network interface card adapted to operate according to general packet radio service standard (GPRS) in par. 51.

**Regarding claim 8.** Itoh further teaches, wherein the sense driver is adapted to continuously sense the operational state of each of the plurality of wireless network adapters. (see par. 13)

**Regarding claim 10.** Itoh further teaches, wherein the policy manager is adapted to conserve power in the battery by deactivation of the non-selected ones of the plurality of network adapters. (see par. 11, and 21)

**Regarding claim 11.** Itoh further teaches the idea of the system comprising a host (figure 1 item 5) and a user input/output interface (see par. 42, i.e. "...expansion slot..."). It would have been obvious to one of ordinary skill in the art to power these components using the battery of the notebook PC.

**Regarding claim 12.** Itoh further teaches wherein the power source provides power to run the sensing driver and the policy manager where he explains that the system can be a notebook PC (par. 10). Krantz teaches the power source being a battery to allow for portability.



**Regarding claim 13.** Itoh further teaches wherein the plurality of network adapters includes at least one wireless network adapter (figure 1 item 20-1 and par. 13 and 43, i.e. "communication adapter 20-1 is a wireless card...").

**Regarding claim 14.** Itoh further teaches, wherein the selected one of the plurality of network adapters is continuously powered by the battery to maintain a connection with a base-station. (par. 13, and 21, the power supply is stopped for disabled adapters, and left to supply enabled adapters to allow communication, par. 72 explains the adapter communicates with an external entity (i.e. a base station))

**Regarding claims 16 and 26.** Itoh further teaches, wherein storing the hierarchy includes programming a network connection priority and a number of preferred available network adapters. (see par. 15)

**Regarding claims 17 and 27.** Itoh further teaches, wherein storing a hierarchy of network adapters includes storing at least one wireless network adapter in the hierarchy (see par. 15), wherein activating the preferred network adapter includes attempting to connect the wireless network adapter to a wireless base-station of a wired network (see par. 15, i.e. "...a given communication adapter among said stored number of communication adapters is enabled...", enabling the adapter reads on attempting to connect to a wireless base station, since the adapter can be wireless. Par. 72 explains the adapter communicates with an external entity (i.e. a base station))

**Regarding claims 18 and 28.** Itoh further teaches, wherein sensing available wireless network adapters includes continuously sensing for newly available wireless network adapters. (see par. 16, i.e. "...attachment/detachment of a LAN card...")

**Regarding claims 19 and 29.** Itoh further teaches, wherein activating a preferred available, network adapter includes deactivating a less preferred network adapter if a more preferred network adapter is sensed to be available. (see par. 13 and 15)

**Regarding claims 20 and 30.** Krantz further teaches wherein sensing available network adapters includes continuously sensing whether the connection between the network adapter and the base-station is dropped in par. 8 where he explains the step of determining whether the network interface module can go into a doze state by detecting if there are packets queued for the device to receive (i.e. if the device is connected to the access point to receive packets).

**Regarding claims 21-22 and 31.** Itoh further teaches the idea wherein the activating of a preferred available network adapter includes deactivating the preferred network adapter if the preferred network adapter is sensed to be unavailable and activating a next, less preferred network adapter. See par. 27-28 where it is explained that the system enables an adapter only if the adapter is available, and that the user can select another adapter to be enabled, and the previously enabled adapter will be disabled in order to enable the new adapter. The user clearly has the ability to activate a next adapter with a lower priority if the adapter enabled loses connection or is unavailable.

**Regarding claim 24.** Krantz further teaches wherein the plurality of wireless network adapters include at least one wireless network interface card adapted to

Art Unit: 2617

operate according to an IEEE 802.11x standard, the GPRS standard, IEEE802.2, or IEEE802.3 standards in par. 3.

**Regarding claim 25.** Krantz further teaches wherein the plurality of wireless network adapters include a first network adapter to communicate by GPRS and a second to operate by an IEEE 802.11x standard in par. 51.

**Regarding claim 32.** Itoh further teaches wherein the kernel level sense driver is in the user device to connect to an electronic system in par. 13, where he explains the method of a communication adaptor selection, within a laptop computer, which allows for connecting to a LAN.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael T. Thier whose telephone number is (571) 272-2832. The examiner can normally be reached on Monday thru Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael T Thier  
Examiner  
Art Unit 2617  
8/6/2007



DUC M. NGUYEN  
SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2600